



DNA PKcs Rabbit mAb

Catalog No	YP-rAb-17744
Isotype	IgG
Reactivity	Human,Mouse,Rat
Applications	WB,IHC,IF,ELISA
Gene Name	PRKDC
Protein Name	DNA-dependent protein kinase catalytic subunit
Purification Process	Protein A
Specificity	Endogenous
Formulation	PBS, 50% glycerol, 0.05% Proclin 300, 0.05%BSA
Source	Monoclonal, Rabbit,IgG
Dilution	IHC 1:200-1:1000; WB 1:2000-1:10000; IF 1:200-1:1000; ELISA 1:5000-1:20000; Note: For IHC, we suggest antigen retrieval with TE buffer pH 9.0
Concentration	0.5 mg/ml
Purity	≥90%
Storage Stability	-15 ° C to -25 ° C/1 year(Do not lower than -25 ° C)
Synonyms	DNA-PKCS;DNA-dependent protein kinase catalytic subunit;PRKDC ; HYRC ; HYRC1 ; DNA-dependent protein kinase catalytic subunit ; DNA-PK catalytic subunit ; DNA-PKcs ; DNPK1 ; p460;PRKDC
Observed Band	469kD
Calculated Molecular Weight	469kD
Cell Pathway	Nucleus
Tissue Specificity	Brain,Cervix carcinoma,Epithelium,Fetal lung,Placen
Function	Catalytic activity:ATP + a protein = ADP + a phosphoprotein.,enzyme regulation:Inhibited by wortmannin. Activity of the enzyme seems to be attenuated by autophosphorylation.,Function:Serine/threonine-protein kinase that acts as a molecular sensor for DNA damage. Involved in DNA nonhomologous end joining (NHEJ) required for double-strand break (DSB) repair and V(D)J recombination. Must be bound to DNA to express its catalytic properties. Promotes processing of hairpin DNA structures in V(D)J recombination by activation of the hairpin endonuclease artemis (DCLRE1C). The assembly of the DNA-PK complex at DNA ends is also required for the NHEJ ligation step. Required to protect and align broken ends of DNA. May also act as a scaffold protein to aid the localization of DNA repair proteins to the site of damage. Found at the ends of chromosomes, suggesting a further role in the maintenance of telomeric stability and the



prevention of chromosomal end fusion. Also involved in modulation of transcription. Recognizes the substrate consensus sequence [ST]-Q. Phosphorylates 'Ser-139' of histone variant H2AX/H2AFX, thereby regulating DNA damage response mechanism. Phosphorylates DCLRE1C, c-Abi/ABL1, histone H1, HSPCA, c-jun/JUN, p53/TP53, PARP1, POU2F1, DHX9, SRF, XRCC1, XRCC1, XRCC4, XRCC5, XRCC6, WRN, c-myc/MYC and RFA2. Can phosphorylate C1D not only in the presence of linear DNA but also in the presence of supercoiled DNA. Ability to phosphorylate TP53/p53 in the presence of supercoiled DNA is dependent on C1D. PTM: Phosphorylated upon DNA damage, probably by ATM or ATR. Autophosphorylated on Thr-2609, Thr-2638 and Thr-2647. Thr-2609 is a DNA damage-inducible phosphorylation site (inducible with ionizing radiation, IR). Autophosphorylation induces a conformational change that leads to remodeling of the DNA-PK complex, requisite for efficient end processing and DNA repair. similarity: Belongs to the PI3/PI4-kinase family. similarity: Contains 1 FAT domain. similarity: Contains 1 FATC domain. similarity: Contains 1 PI3K/PI4K domain. similarity: Contains 2 HEAT repeats. similarity: Contains 3 TPR repeats. subunit: DNA-PK is a heterotrimer of PRKDC and the Ku p70-p86 (XRCC6-XRCC5) dimer. Formation of this complex may be promoted by interaction with ILF3. Associates with the DNA-bound Ku heterodimer, but it can also bind to and be activated by free DNA. Interacts with DNA-PKcs-interacting protein (KIP) with the region upstream the kinase domain. PRKDC alone also interacts with and phosphorylates DCLRE1C, thereby activating the latent endonuclease activity of this protein. Interacts with C1D.

Background

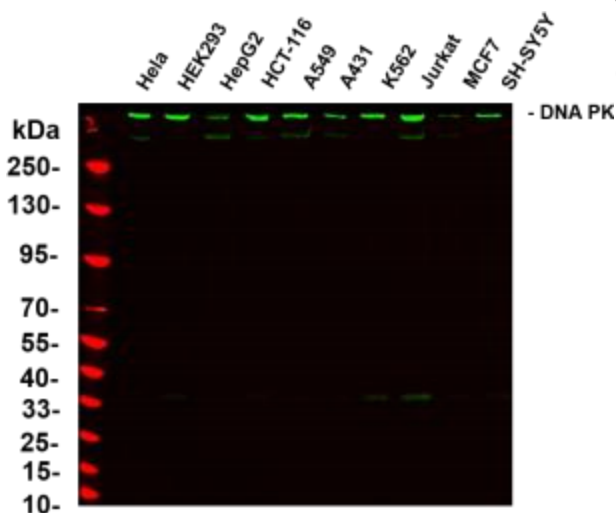
This gene encodes the catalytic subunit of the DNA-dependent protein kinase (DNA-PK). It functions with the Ku70/Ku80 heterodimer protein in DNA double strand break repair and recombination. The protein encoded is a member of the PI3/PI4-kinase family. [provided by RefSeq, Jul 2010],

matters needing attention

Avoid repeated freezing and thawing!

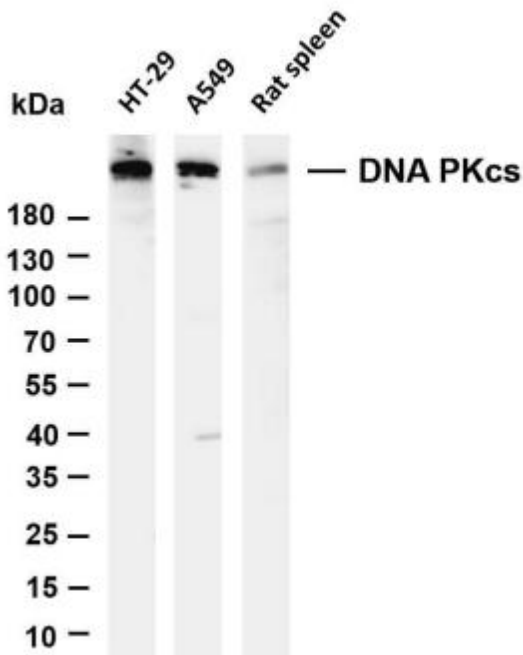
Usage suggestions

This product can be used in immunological reaction related experiments. For more information, please consult technical personnel.

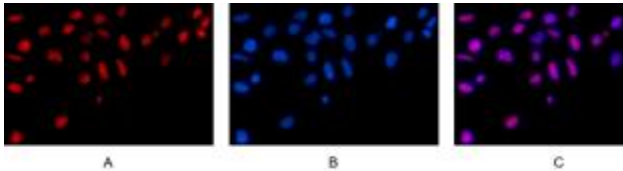


Various whole cell lysates were separated by 4-20% SDS-PAGE, and the primary antibody was used at 4~C, over night with a 1:5000 dilution. The Dylight 800-conjugated Goat anti-Rabbit antibody





Various whole cell lysates were separated by 4-20% SDS-PAGE, and the membrane was blotted with anti-DNA PKcs antibody. The HRP-conjugated Goat anti-Rabbit IgG(H + L) antibody was used to detect the antibody. Lane 1: HT-29 Lane 2: A549 Predicted band size: 469kDa Observed band size: 469kDa



Immunofluorescence analysis of HEK293. Picture A: DNA PKcs antibody (red). Picture B: DAPI (blue). Picture C: Merge of A+B

